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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/873,976 | 06/01/2001 | Anthony J. Cooper | 508-039.7-1 | 3295 |
| 4955 | 7590 | 08/11/2006 | EXAMINER | |
| WARE FRESSOLA VAN DER SLUYS & ADOLPHSON, LLP BRADFORD GREEN, BUILDING 5 755 MAIN STREET, P O BOX 224 MONROE, CT 06468 | | | TRAN, THANH Y | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2822 | |

DATE MAILED: 08/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/873,976

Applicant(s)

COOPER ET AL.

Examiner

Thanh Y. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 53-59 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 53-59 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 53, 57, 58 and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshimura et al (U.S. 6,845,184) in view of Desai et al (U.S. 6,266,249).

As to claim 53, Yoshimura et al discloses in figure 51-2 an electronic component to have an electrical component incorporated thereon, the electronic component comprising: a substrate (320a) having at least a front substrate layer (comprising elements 21, 24, 23) with a front surface for receiving the electrical component; characterized in that the electrical component further comprising: grooves ("laser cuts" 456) provided in the front surface of the substrate (320a) with separate conductive lines (conductive layers 458) where each conductive line (458) completely fills a groove (456) of the grooves (456), the conductive lines (458) for electrical connection to the electrical component.

Yoshimura et al does not disclose conductive vias provided through the substrate for electrical connection to the electrical component.

Desai et al discloses in figures 2a-3b an electronic component comprising: conductive vias (18) provided through the substrate (16) for electrical connection to the electrical component (30) (see col. 3, lines 19-39). Therefore, it would have been obvious to a person having ordinary

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skill in the art at the time the invention was made to modify the electronic component of Yoshimura et al by having conductive vias provided through the substrate as taught by Desai et al for electrically coupling substrate vias to corresponding bonding pads of the electrical component (integrated circuit) in order to provide electrical connection between the substrate and the chip (electrical component) (see col. 3, lines 19-39).

As to claims 57, 58 and 59, Yoshimura et al discloses in figure 51-2 an electronic component. wherein the conductive lines ("layer" 458) are metal (see col. 44, lines 29-48). The limitations of "the conductive lines are of metal deposited by sputtering" in claim 57, "the conductive lines are of metal deposited by vacuum deposition" in claim 58, and "the conductive lines are a fired slurry deposition" in claim 59 are process limitations in the product claims, which product does not otherwise patentably distinguish over prior art, cannot impart patentability to the product. In re Stephens 145 USPQ 656 (CCPA 1965).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 54-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshimura et al (U.S. 6,845,184) in view of Desai et al (U.S. 6,266,249) as applied to claim 53 above, and further in view of Berkely et al (U.S. 6,031,729).

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As to claims 54, 55, and 56, Yoshimura et al discloses in figure 51-2 an electronic component, wherein the grooves are formed by laser cutting (see col. 44, lines 29-48);

Yoshimura et al in view of Desai et al does not disclose the front substrate layer is ceramic; and the grooves are formed by serration of a tape-casing, doctor blade or chemical etching. However, Berkely discloses in figure 4 a ceramic substrate having a front substrate layer (33). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the electronic component of Yoshimura et al by using a ceramic material for a front layer of the substrate as taught by Berkely. One of ordinary skill in the art would have been motivated because ceramic material is a high temperature material and could be used for supporting the chip component mounted on the substrate; and the ceramic material also has a low production cost. The limitations of "the grooves are formed by serration of a tape-casing, doctor blade" in claim 54; "the grooves are formed by laser cutting" in claim 55; and "the grooves are formed by chemical etching" in claim 56 are process limitations in the product claims, which product does not otherwise patentably distinguish over prior art, cannot impart patentability to the product. In re Stephens 145 USPQ 656 (CCPA 1965).

Response to Arguments

5. Applicant's arguments filed on 5/18/06 have been fully considered but they are not persuasive.

Applicant argued that Yoshimura does not disclose or suggest that the reflective metal forms a conductive line for electrical connection to the electrical component.

In response, the examiner disagrees with applicant's argument because figure 51-2 of Yoshimura et al clearly discloses layers 458 are conductive lines. Layers 458 are "reflective

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metal” which are made of metal (see col. 44, lines 29-48), thus they are considered as “conductive lines”. Furthermore, the limitation of “for electrical connection to the electrical component” is intended used language and it does not add any appreciable weight to the claim above, since it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ 2d 1647 (1987).

Applicant further argued that layers 458 of Yoshimura do not completely fill the grooves.

In response, the examiner disagrees with applicant’s argument because figure 51-2 of Yoshimura et al clearly discloses conductive lines (conductive layers 458) are formed completely within the grooves (456).

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh Y. Tran whose telephone number is (571) 272-2110. The examiner can normally be reached on M-F (9-6:30pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zandra Smith can be reached on (571) 272-2429. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TYT


Michael Trim
Primary Examiner